

Atoms and the Periodic Table Revision Mat **Answers**

Write the correct key word for each definition. a

Definition	Key Word
The smallest part of an element that can exist.	atom
A substance made of only one type of atom.	element
A substance made up of two or more different elements chemically bonded together.	compound
A substance consisting of two or more substances not chemically combined together.	mixture
A column of the periodic table that contains elements with similar chemical properties.	group
A row on the periodic table.	period
The general direction in which a set of data changes, i.e. increasing or decreasing.	trend
A series of chemical symbols showing the number of atoms of each element in a compound.	chemical formula
A letter or series of letters used to represent an element.	chemical symbol

Write the symbol for the following elements. You can use the periodic table if you need to. b

oxygen **O**

hydrogen **H**

carbon **C**

sodium **Na**

chlorine **Cl**

Complete the table to give the number of elements and number of atoms in each compound. c

Compound	Number of Elements	Number of Atoms
CO ₂	2	3
H ₂ O	2	3
NaCl	2	2
CH ₄	2	5
H ₂ SO ₄	3	7
C ₆ H ₁₂ O ₆	3	24
CH ₃ COOH	3	8

Draw a diagram to represent a molecule of ammonia. Ammonia has the formula NH₃. d

For each description, **tick** the correct box to show whether it describes a compound or a mixture. e

Description	Compound	Mixture
The different elements are chemically joined together.	✓	
Each substance keeps its own properties.		✓
Each substance can be separated easily using separating techniques like filtration, distillation, evaporation and chromatography.		✓
You cannot vary the amount of each element.	✓	

Next to each diagram, write down whether it represents an element, a compound or a mixture. f

If it represents a mixture, say if it contains elements, compounds or both.

element

mixture of an element and a compound

compound

mixture of two compounds

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A column of the periodic table that contains elements with similar chemical properties.	
A row on the periodic table.	
The general direction in which a set of data changes, i.e. increasing or decreasing.	
A series of chemical symbols showing the number of atoms of each element in a compound.	
A letter or series of letters used to represent an element.	

Write the symbol for the following elements. You can use the periodic table if you need to. **b**

oxygen _____

hydrogen _____

carbon _____

sodium _____

chlorine _____

Complete the table to give the number of elements and number of atoms in each compound. **c**

Compound	Number of Elements	Number of Atoms
CO ₂	2	3
H ₂ O		
NaCl		
CH ₄		
H ₂ SO ₄		
C ₆ H ₁₂ O ₆		
CH ₃ COOH		

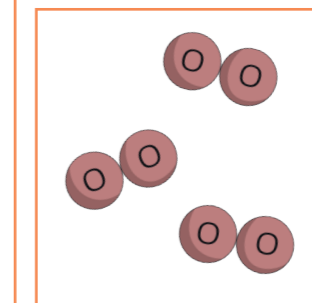
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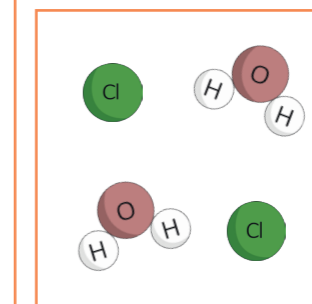
For each description, **tick** the correct box to show whether it describes a compound or a mixture. **e**

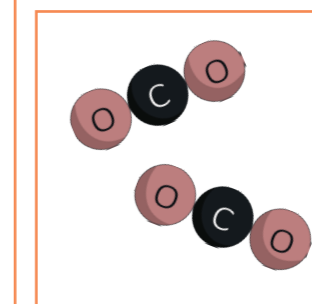
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You cannot vary the amount of each element.		

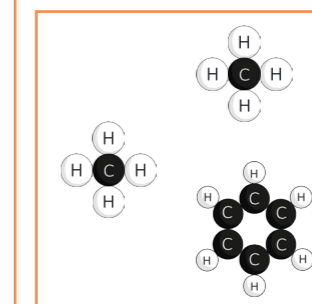
Next to each diagram, write down whether it represents an element, a compound or a mixture. **f**

If it represents a mixture, say if it contains elements, compounds or both.









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For each property, tick **one** box to show whether it describes a typical metal or a typical non-metal. g

Property	Metal	Non-Metal
shiny		
good conductor of heat		
poor conductor of electricity		
low density		
oxides form alkaline solutions		
malleable		
brittle		
ductile		
dull		

A student holds a magnet close to an unknown material. The material is not attracted to the magnet. h

Explain why this does not mean the material is a non-metal.

Name an element that is a metal. i

Name an element that is a non-metal.

Complete the sentences with **one** of the key words to describe the trend as you move down each group. j

Melting and Boiling Points

In Group 1, the melting and boiling points _____ as you move down the group.

In Group 7, the melting and boiling points _____ as you move down the group.

In Group 0, the melting and boiling points _____ as you move down the group.

Reactivity

In Group 1, the reactivity _____ as you move down the group.

In Group 7, the reactivity _____ as you move down the group.

Key Words
 increase/s
 decrease/s
 stay/s the same

State **three** things that increase as you move down Group 1, Group 7 and Group 0. l

- _____
- _____
- _____

Draw the stepped line on the periodic table. k
 Label the sections where you would find metals and non-metals.
 Label the alkali metals, the halogens and the noble gases.

										H											He
Li	Be											B	C	N	O	F	Ne				
Na	Mg											Al	Si	P	S	Cl	Ar				
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr				
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe				
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn				
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og				

Give **two** properties of elements found in the following groups. m

alkali metals

- _____
- _____

halogens

- _____
- _____

noble gases

- _____
- _____